CONTRIBUTIONS FROM THE GRAY HERBARIUM OF HARVARD UNIVERSITY—NO. CLXII.

IDENTIFICATIONS AND REIDENTIFICATIONS OF NORTH AMERICAN PLANTS

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(*Continued from page 162*)

Habenaria psycodes (L.) Spreng., forma **varians** (Bryan), stat. nov. Var. *varians* Bryan in Ann. Mo. Bot. Gard. iv. 37, pl. 5, fig. B (1917).

H. fimbriata (Ait.) R. Br., forma **mentotonsa,** f. nov., labelli lobo terminali cuneato integro vel apice breviter eroso-dentato; petalis integris.—Maine: meadow, Hamilton Cove, Lubec, Washington County, August 2, 1909, *Fernald*, nos. 1662d (type in Herb. Gray.), 1662e and 1662g.

Quite like typical *Habenaria fimbriata* but with entire petals and narrowly cuneate entire or obscurely short-dentate or erose terminal division of the lip. Entire petals are frequent in both *H. fimbriata* and the smaller-flowered *H. psycodes*, and the lip of *H. psycodes*, forma *ecalcarata* (Bryan) Dole is entire. At Hamilton Cove *H. fimbriata*, forma *mentotonsa* (with shaved chin) is relatively common, mixed with typical *H. fimbriata*, but I cannot follow Correll who, in Bot. Mus. Lfls. Harv. Univ. vii. 65 (1938), calls this plant the characteristic slender-racemed one with greenish-white or rose-tinted flowers, the hybrid of *H. lacera* (Michx.) Lodd. and *H. psycodes*, the always scanty and relatively insignificant plant known as × *H. Andrewsii* Marcus White ex Niles, Bog-Trotting for Orchids, 258 with plate (1904).

Correll's vast aggregation of relatively typical *Habenaria psycodes*, *H. fimbriata* and *H. lacera*, var. *terrae-novae* Fern. in Rhodora, xxviii. 21 (1926) under the unsatisfactorily blanketing name × *H. Andrewsii* can appeal to no field-botanist who for decades has known the various elements involved. Much Newfoundland *H. lacera*, var. *terrae-novae* is included under his remodeled × *H. Andrewsii*, although no true *H. lacera* is found in Newfoundland, where its smaller-flowered var. *terrae-novae* occurs by thousands on boggy barrens, tundra and treeless alpine areas, almost always apart from *H. psycodes* of richer, often alluvial, thickets and meadows. On Sable Island, 100 miles out-to-sea off

Canso, Nova Scotia, the only Fringed-orchid is *H. lacera*, var. *terrae-novae*.

Very similarly, although *Habenaria fimbriata*, forma *mentotonsa* occurs in eastern Washington County, Maine, it is significant that in the many pigeonholes of Fringed-orchids in the Herbarium of the New England Botanical Club I can find neither *H. lacera* nor *H. psycodes* (parents of true × *H. Andrewsii*) from that county. Both seem to stop their eastern extension in coastwise Maine in Hancock County, 70–90 miles to the southwest of Cutler.

Similarly, nine tenths of the specimens in the Gray Herbarium and that of the New England Botanical Club which have been annotated (some of them cited) as × *Habenaria Andrewsii* are characteristic *H. fimbriata* (including the TYPE of *H. fimbriata*, forma *albiflora* Rand & Redfield) or *H. psycodes*. × *H. Andrewsii*, as well as Fleur-de-lis, Blackberry blossoms, Yellow Clintonia, Indian Pipes, "white, innocent twigs of apple" and other non-orchidaceous plants, was illustrated in Bog-Trotting for Orchids. The life-size photograph shows racemes 2–2.5 cm. thick; and the description calls for "Labellum about ⅓–½ inch [8–12.5 mm.] broad". In his very detailed account of *H. psycodes* × *lacera*, Andrews, in RHODORA, iii. 246 (1901), said: "Lower leaves as in *H. lacera* . . . , width to 3 cm. . . . Average width of lip about 12 mm. . . . cleft as in *H. lacera* . . . Glands of pollen-masses . . . elliptical or slightly kidney-shaped", and, on p. 247, "All in all the characteristics of the hybrid seem to show a stronger influence of *H. lacera*". The distinctive characters of *H. lacera* and of *H. fimbriata*, besides color and dissection of lip, include the following. H. LACERA: largest lower leaves 1–3.5 cm. broad; raceme 2–6 cm. thick; perianth 5–6 mm. long; lip 1–1.5 cm. long and broad, its terminal division cuneate into a very slender claw; glands of anther oblong-linear. H. FIMBRIATA: largest lower leaves 2.5–9 cm. broad; raceme 5–9 cm. in diameter; perianth 9–12 mm. long; lip 1.5–2 cm. long, 1.8–3 cm. broad, its dilated terminal division short-stalked or subsessile; glands suborbicular. In all except the narrow and fringeless terminal division of its lip *H. fimbriata*, forma *mentotonsa* is very characteristic *H. fimbriata*, growing, as said, far from *H. lacera* or *H. psycodes*. In view of these many considerations it is toler-

ably certain that the great group of amateur and professional botanists who have assembled the large representation of *H. lacera, psycodes* and *fimbriata* in the herbarium of the New England Botanical Club and in the Gray Herbarium, for the most part with correct identifications, have not all been wrong.

CLEISTES DIVARICATA (L.) Ames, var. **bifaria,** var. nov. (TAB. 1048), var. typica recedit planta plerumque 1.5–5 dm. alta pedunculo 0.3–1.6 dm. longo; sepalis longioribus 3–4.5 cm. longis; petalis 2–3 cm. longis, 5–10 mm. latis.—Upland woods, mountain-crests and slopes, Cumberland Plateau and Mountains of Kentucky and Tennessee and Blue Ridge of western North and South Carolina, coming out to peats and pine barrens of the Coastal Plain from eastern North Carolina to Florida, thence to Louisiana. MAP 2.[1] TYPE from summit of Table-rock Mountain, Burke Co., North Carolina, July 2, 1891, *Small & Heller*, no. 285 (Gray Herb., ISOTYPES in several other herbaria).[2]

Arethusa divaricata L. Sp. Pl. 951 (1753), typonym of *Cleistes divaricata* (L.) Ames, Orchidaceae, vii. 21, pl. 108 (1922), was based on *Serapias radicibus palmato-fibrosis, caule unifloro* of Gronovius from Virginia (photograph before me) and upon Catesby's plate 58 of his *Helleborine Lilii folio caulem ambiente*, etc., represented as having an extraordinarily large flower (with sepals 6.4–7.3 cm. long, petals 6–7 cm. long and lip 7 cm. long). The Clayton material, shrunken by drying, is more modest, its dried and distorted sepals up to 4.2 cm. long, petals to 3.6 cm. and lip slightly over 4 cm. long. The Clayton material represents a small-flowered extreme of the plant which locally follows the Coastal Plain from southern New Jersey to northern Florida (MAP 1). The Catesby drawing is presumably exaggerated in size. I have had through the courtesy of the Curators the advantage of studying, besides that in the Gray Herbarium and the Ames Herbarium, all the material at the United States National Herbarium, the New York Botanical Garden, the Academy of Natural Sciences of Philadelphia and the Brooklyn Botanic Garden. These collections show that there are two

[1] Since the map was engraved, specimens from additional stations in the Cumberland Mountains of Tennessee have been sent me for study by Professor Jesse M. Shaver of George Peabody College for Teachers, at Nashville. They add three dots for Tennessee.

[2] One Florida specimen of 1888, bearing the intriguing data, "wedding trip", has not been entered on the map; neither have I selected it as the type of var. *bifaria* (*in two parts* or *on two sides*).

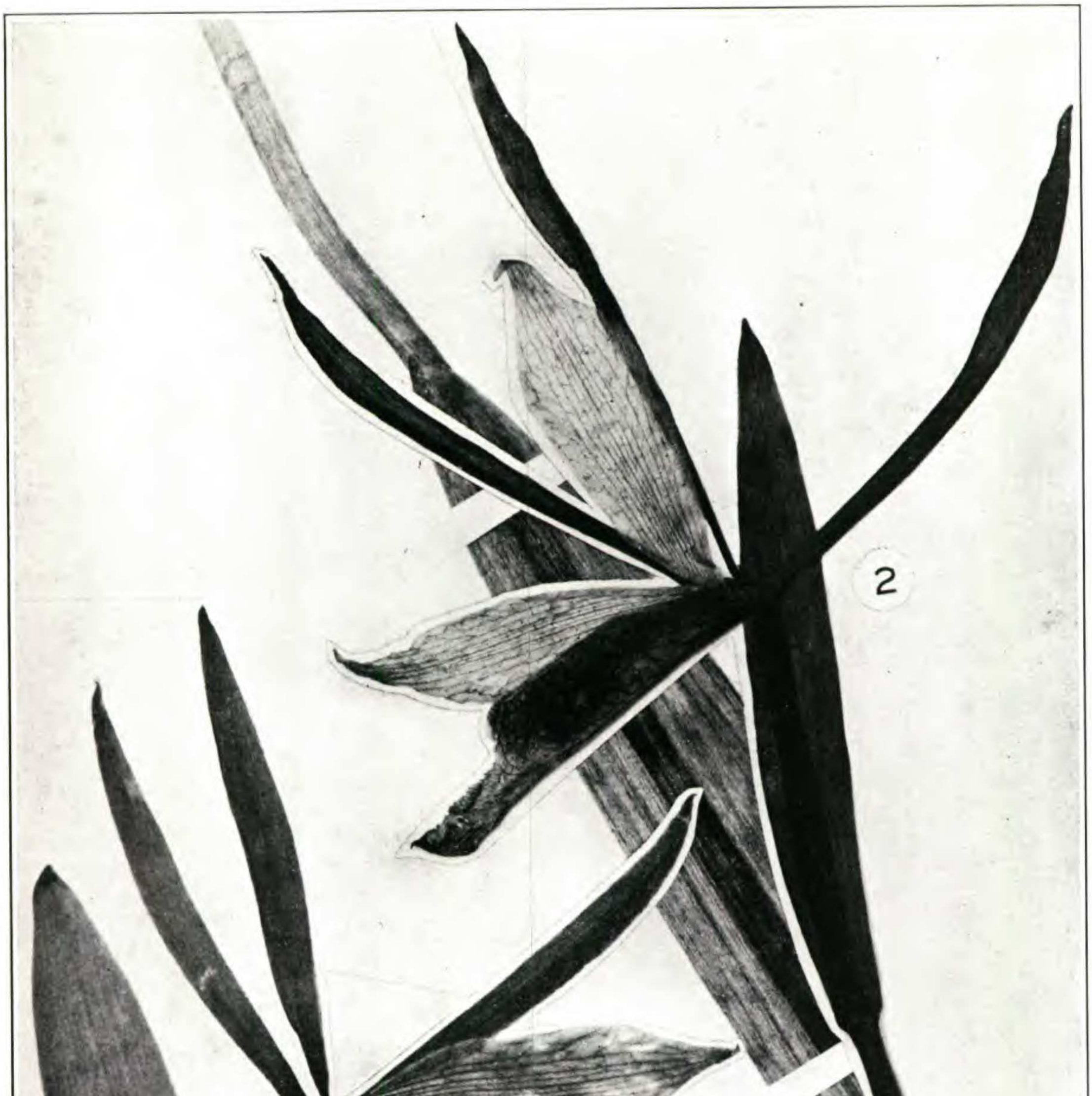


Photo B. G. Schubert

CLEISTES DIVARICATA, all figs. × 1: FIGS. 1 and 2, median leaf and flower from eastern Virginia (type-region); FIG. 3, flower from southern New Jersey.

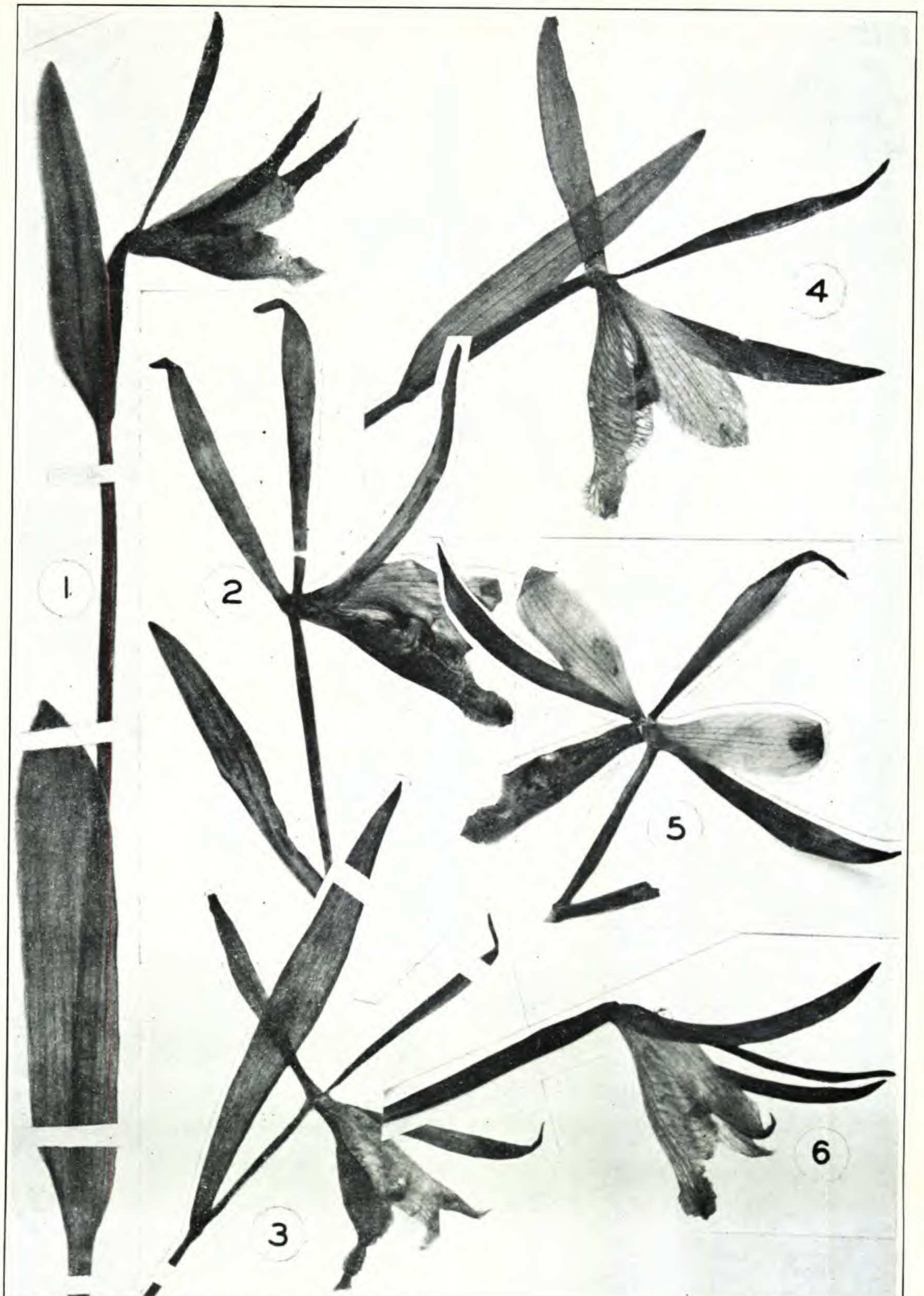
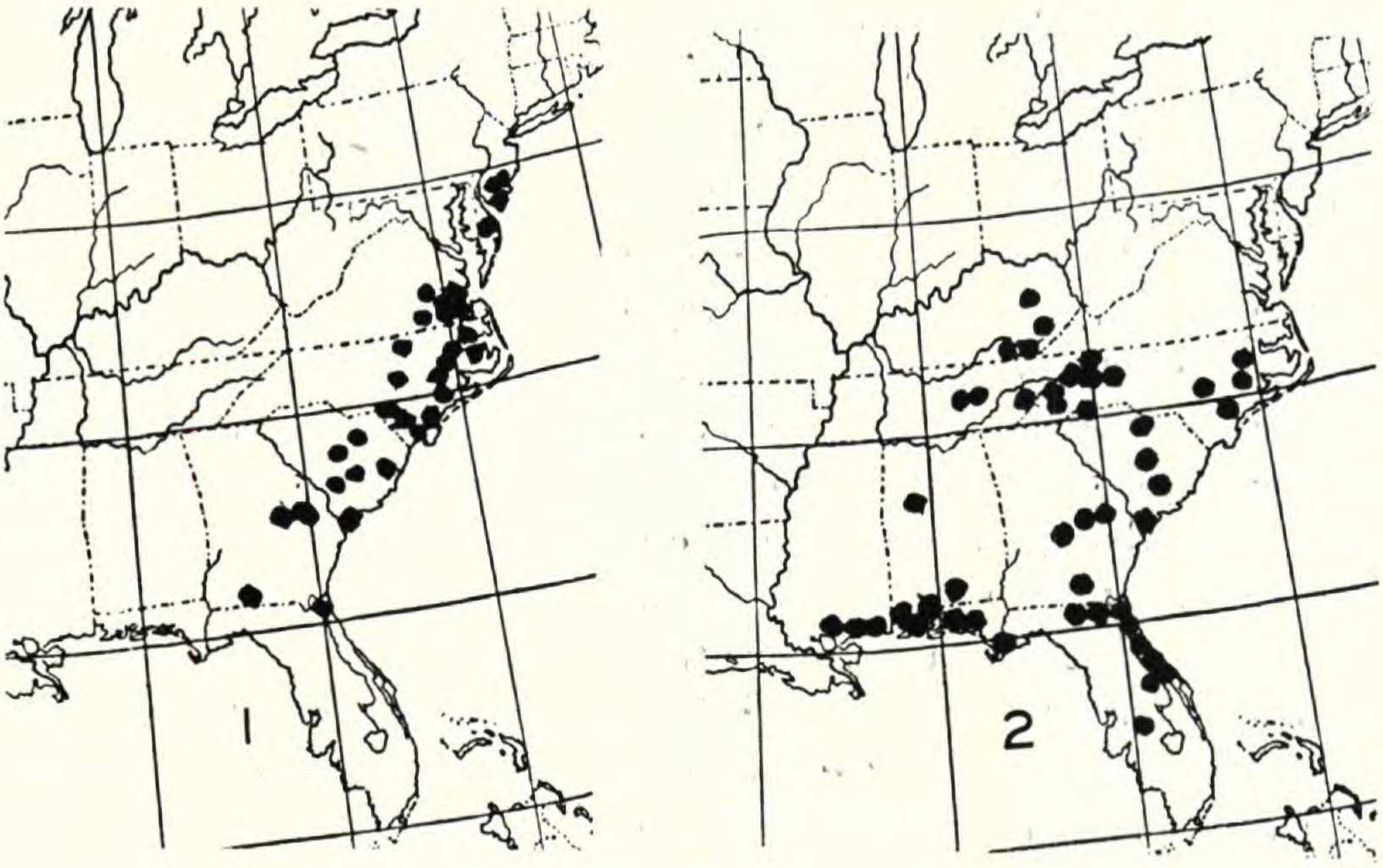


Photo B. G. Schubert

CLEISTES DIVARICATA, var. BIFARIA, all figs. × 1: FIG. 1, upper half of plant from TYPE-series; FIGS. 2–6, flowers from various localities.



MAP 1, Range of typical CLEISTES DIVARICATA; MAP 2, of var. BIFARIA.

rather strongly defined varieties passing as *Cleistes divaricata*. The plant which is confined to the Coastal Plain, northward to southern New Jersey but in the South not found west of northern Florida, seems to be true *C. divaricata*. This plant (our PLATE 1047) in its best development is usually 4 or 5 dm. high, the whole series ranging from 2.2–7.2 (av. 4.5) dm. high, while the peduncle (between the base of the median leaf and the floral bract is 0.9–2 (av. 1.5) dm. long. The median leaf ranges from 6.5–15 (av. 10) cm. long; the lateral sepals 4–7 cm. long; petals 3.5–5 (by Catesby shown up to 7) cm. long and 8–14 mm. broad; the ovary and stipe during anthesis 2.5–4.5 (av. 3.25) cm. long.

Throughout much of the Southeast, from Florida to eastern North Carolina, west to Louisiana, chiefly on the Coastal Plain, and inland on the Blue Ridge (up to open summits) to North Carolina and on the Cumberland Plateau and Mountains of Tennessee and Kentucky, the plant is generally smaller in most parts, var. *bifaria* (from its two areas of development). In var. *bifaria* (PLATE 1048) the stem is rarely 6:5 dm. high, usually ranging from 1.5–5 dm., with the peduncle 0.3–1.6 (av. 1) dm. long and the median leaf 3.5–13 (av. 7.6) cm. long. Its flower is conspicuously smaller, though sometimes approaching that of var. *typica*, with longer sepals 3–4.5 cm. long, petals only 2–3

cm. long and 5–10 mm. wide, and ovary and stipe during anthesis 1.2–3.5 (av. 2.6) cm. long.

Occurring on the ancient Cumberland Mountains and Plateau and along the ancient Blue Ridge, var. *bifaria* seems to be the biological type of the species, which, on withdrawal of the Cretaceous and then the Tertiary seas from the country to the east and south, largely moved out to the Coastal Plain. There, in new environment, it has given rise to the larger-flowered extreme (nomenclatural type of the species) which has followed locally northward to southern New Jersey.

As indicating the confusion heretofore of typical *Cleistes divaricata* of the Atlantic Coastal Plain and var. *bifaria* of the southern Atlantic and the Gulf Coastal Plain, as well as the mountains, there is a sheet in the Britton Herbarium, originally in the herbarium of the late Professor Lewis R. Gibbes of the College of Charleston, South Carolina, labeled in the hand of Dr. John K. Small as from "Flat Rock, S. C.". This original label, which, like all original labels, would never be altered or written upon by those who fully respect original documents, was unfortunately altered by a later botanist, who knew the Carolina Mountains, to "N. C." instead of the original S. C., and the original label further desecrated by the misinformative addition "Henderson Co., N. C.". The specimen is of typical Atlantic Coastal Plain *C. divaricata*, which is apparently unknown in Henderson County or elsewhere on the Blue Ridge or on the Cumberland Plateau or Mountains. In view of the fact that Gibbes lived at Charleston and that there is another sheet of material with his original handwriting on the labels (one "Summerville, 20 May, 1859", the other "Flat Rock, 12 June, 1858. L. R. G.") it would seem that the specimen with unjustifiably altered label came from Flat Rock on Flat Rock Creek, which drains into Wateree River, a tributary of Santee River, in Kershaw County, on the Coastal Plain of South Carolina, north of Camden and northwest of Sumter and Charleston.

CALOPOGON PULCHELLUS (Salisb.) R. Br., var. **latifolius** (St. John), stat. nov. Forma *latifolius* St. John in Proc. Bost. Soc. Nat. Hist. xxxvi. 69, pl. 1, fig. 4 (1921). *Limodorum tuberosum*, f. *latifolium* (St. John) House in Bull. N. Y. State Mus. no. 243–244: 51 (1923), as to name only. *Cathea pulchella*, f. *latifolia* (St. John) House, l. c. no. 254: 244 (1924), as to name only.

The original material is much more than a broad-leaved extreme of *Calopogon pulchellus*, a species which, even in the same area, may have the leaf varying from narrowly linear and only 2–4 mm. wide up to lanceolate or lance-oblong and up to 2 cm. wide, while very extreme and gigantic plants (up to 9.75 dm. high), may have the leaf up to 3–5 cm. broad. In this typical *C. pulchellus*, either very narrow- or very broad-leaved, the leaf is usually solitary and much shorter than the elongate scape. The type of var. *latifolius* has the leaves often paired and broadly lance-oblong to narrowly oblong-ovate, only twice to six times as long as broad and greatly overtopping the very short scape, while its heavily dark-coated tuber is much larger (2 cm. thick) than in any typical *C. pulchellus* I have ever seen. The type is past flowering, but other material, also from Sable Island, is flowering. This is narrower-leaved and has either paired or single leaves, although its scape is much shorter than to barely overtopping the leaf or leaves; furthermore, some material from the Magdalen Islands is stongly transitional to var. *latifolius*. This plant of Sable Island and, less typically, of the Magdalen Islands is not the Newfoundland *Limodorum tuberosum*, var. *nanum* Nieuwland in Am. Midl. Nat. iii. 130 (1913). The latter is merely typical *Calopogon pulchellus* at its bleak northern limit, 0.7–2 dm. high, with scape much overtopping the leaf, the raceme reduced to 1–4 flowers, merely the smallest extreme of the species, just as plants of southeastern Virginia 6–9.75 dm. (pretty close to 1 m.) high, with the leaf 3–5 cm. broad and the 10–20 flowers 4–4.5 cm. broad, are the largest. The paired and short leaves and the large tuber of the type of var. *latifolius* give the plant (past flowering), as shown in St. John's figure, the aspect of *Liparis!*

SPIRANTHES TUBEROSA Raf., var. **Grayi** (Ames), comb. nov. *S. Grayi* Ames in RHODORA, vi. 44 (1904). *S. simplex* Gray, Man. ed. 5: 506 (1867), not Griseb. Fl. Brit. W. Ind. 641 (1864).

As noted by me in RHODORA, xlviii. 6 and 10 (1946), the name *Spiranthes tuberosa* Raf., Herb. Raf. 45 (1833) antedates by seven years the name *S. Beckii* Lindley (1840), the latter name currently used for the very slender and tiny-flowered plant which Ames correctly, except for the overlooked *S. tuberosa*, named *S. Grayi* in 1904. It is fortunate, at least, to be able to dismiss the

name *S. Beckii*, for Lindley made a sad mess of his original publication of it in his Genera and Species of Orchidaceous Plants, 472 (Sept. 1840). There, in the fashion of many British botanists of his day (and too often of the present day), he chose the British use of the name *S. gracilis*, rather than the earliest use of it. Consequently, he took up *S. gracilis*, as of Hook. (we now would say *sensu* Hook.), Fl. Bor.-Am. ii. 202, t. 203 (1839), with the synonymy copied directly from Hooker. Hooker mis-cited the combination as starting in Bigelow, Fl. Bost. ed. 2: 322 (1824), Bigelow having called it *Neottia gracilis*. Hooker cited his *S. gracilis* (Bigel.) Hook. as having the "Hab. Canada; and Lake Huron (*Dr. Todd*) to Fort Franklin, on the Mackenzie River. *Dr. Richardson. Drummond*" and his plate beautifully showed the Canadian *S. lacera* (Raf.) Raf., l. c. 44 (1833), discussed and illustrated by me in Rhodora, l. c. 5–9, pl. 993 (1946). Lindley, maintaining *S. gracilis* sensu Hooker (1839), assumed that Drummond, who actually explored northward to northern Canada, had collected it much farther south, consequently he interpreted the Drummond citation given by Hooker as meaning "Louisiana", then for good measure he added "etiam in Bahamis"! *S. gracilis* (Bigelow) Beck, Bot. 333 (1833) and *S. gracilis* (Bigelow) [sensu] Hooker (1839), although two different species so far as the plants are concerned, both go back nomenclaturally to the same type.

Having thus temporarily saved the name *Spiranthes gracilis* sensu Hooker (1839), Lindley's next problem was to dispose of the earlier *S. gracilis* (Bigelow) Beck (1833). That was quickly accomplished by renaming the latter *S. Beckii* Lindl. l. c. (1840), with the additional synonyms *Neottia tortilis* [sensu] Elliott (1822) [not Swartz (1800)], and *Limodorum praecox* Walt. (1788) basis of *S. praecox* (Walt.) S. Watson (1890). Nomenclaturally alone the name *S. Beckii* Lindl. is doubly illegitimate. If it was, as he said, the same as the earlier *S. gracilis* (Bigelow) Beck he should have used the latter name for it; if, however, it was also the same as *Limodorum praecox* Walt. (1788) Lindley should have retained this specific name. Taxonomically, furthermore, *S. Beckii* Lindl. was as hopeless a muddle as could be imagined, for it was concocted from elements of several different species. *Limodorum praecox* Walt., originally described with fibrous roots

and ensiform leaves ("radicibus fibrosis, foliis ensiformibus") etc., is a plant with long and mostly linear firm leaves extending up the stem, the relatively coarse spike with heavily pubescent rachis, bracts and ovaries, the perianth 4–6 mm. long, etc., the perianth of *S. tuberosa* being only 2–3 mm. long. Nevertheless, Lindley described his *S. Beckii* as "perfectly glabrous. The flowers are very minute . . . S. glaberrima, foliis omnibus radicalibus anguste ovalibus" etc. If, furthermore, it were *N. tortilis* sensu Elliott, it would be very difficult to reconcile Lindley's description with Elliott's "foliis radicalibus linearibus . . . *Stem* pubescent towards the summit. *Leaves* . . . of the root linear lanceolate, nine to ten inches long . . . Bracteal leaves pubescent" etc. In view of the vertical, finger-like, usually solitary tuber of *S. tuberosa* ("*S. Beckii*" of most recent authors) it is illuminating that Lindley knew nothing of this character nor did those authors with whose descriptions he associated his name. Furthermore, since his *S. Beckii* was "perfectly glabrous" as is *S. tuberosa*, it is significant that Lindley said in his Latin diagnosis "ovario puberulo", a character belonging to *S. praecox*. The "lip [with] . . . a remarkably lax cellular texture" applies to *S. tuberosa*, but the description and cited synonyms otherwise are so confused that it is certainly fortunate that the name given by Lindley is illegitimate.[1]

Spiranthes tuberosa consists of two strongly marked geo-

[1] Hooker, under his *Spiranthes gracilis* (i. e. *S. lacera*), a plant with glabrous inflorescence, and which Hooker correctly described "foliis radicalibus ovatis petiolatis", cited as synonyms the much earlier *Ophrys aestivalis* Michx. Fl. Bor.-Am. ii. 157 (1803) and *Neottia tortilis* Pursh, Fl. Am. Sept. ii. 589 (1814), "(*non Sw.*)". Lindley, under *Spiranthes gracilis*, cited the same synonyms. Evidently neither he nor Hooker studied very closely the Michaux description [and specimens] nor the description by Pursh; otherwise they would not have cited them under the wholly glabrous *S. gracilis*, with leaves all basal and ovate, for Michaux definitely described his *Ophrys aestivalis:* "O. scapo folioso: foliis glabris, lanceolatis, acutissimis; spica pubescente, spirali" etc. and he suspected that it might be the *Limodorum praecox* of Walter, *O. aestivalis* occurring "a Pensylvania ad Carolinam". The type of *Ophrys aestivalis*, a species which I do not find accounted for in recent American literature, as shown in one of Cintract's photographs before me, consists of two full plants, with linear-lanceolate leaves extending up the stem, the longer blades about 2 dm. long, the slightly spiraling to secund spike with perianths 6 mm. long. Mounted with these two plants is a broken-off spike of *Spiranthes cernua*, which obviously was an inadvertent addition made by the mounter. *Ophrys aestivalis* Michx. (1803) is *Spiranthes vernalis* Engelm. & Gray (1845). Most fortunately, we do not have to displace the latter name, for there is an Old World *Spiranthes aestivalis* Richard (1818).

As to Pursh's misidentification of *Neottia tortilis*, we need not here go into details, except to note that Pursh included under it *Ophrys aestivalis* Michx., gave the same range as the latter, and described the leaves as *linear*. Enough said!

graphic variations. Essentially all the material in the Gray Herbarium and that of the New England Botanical Club from New England, forty-five collections, has a relatively close spike with closely spiralling and often crowded and overlapping flowers, as in the type of *S. simplex* Gray, not Grisebach. This plant varies from 0.7–3 dm. (farther south to 4.5 dm.) in height, and its vertical tuber is thick and finger-like, usually solitary. This, as said, is the plant described by Gray as *S. simplex* and correctly renamed by Ames *S. Grayi*. All the material in the Gray Herbarium from the southernmost states, from Florida to eastern Texas, north to South Carolina, has the spike strongly secund, without or with few spiral twists in the rachis and the relatively few flowers distant and not overlapping. From North Carolina to New Jersey both variations, with some transitions, occur, the plant often reaching a height of 5.25 dm., while its roots are usually more slender and not infrequently 2 or even 3. This is true *S. tuberosa* Raf. which was described with "spic. gracilis vix spiralis secunda . . . pedal."

Dr. Schubert has made dissections of flowers from several specimens of each extreme and, while each series shows some variation in the degree of toothing and shape of the lip, there appears to be nothing constant except the relatively dense and strongly spiralling spike and usually thicker tuber to separate var. *Grayi* from the usually more southern typical *S. tuberosa*.

Gray's *Spiranthes simplex*, type of *S. Grayi* and of *S. tuberosa*, var. *Grayi*, had "scape . . . bearing a small narrow (rarely 1-sided) spike of *very short flowers* (perianth 1″–1½″ long)". It came from "E. Mass. (Nantucket, *Dr. Robbins*), New Jersey (*C. F. Austin*, &c.), and Delaware, *Wm. M. Canby*." Gray's original sheet contains the Nantucket material from *Robbins*, which is the dense-spiked *S. tuberosa*, var. *Grayi;* a series of six quite similar plants collected by himself ("&c.") in the pine barrens of New Jersey (the *Austin* material evidently not retained by him), and three characteristic plants (one of them misplaced by the mounter) with the "rarely 1-sided" spike from *Canby*, but marked as from "Salisbury, Maryland" (not "Delaware"), this *Canby* material being of typical *S. tuberosa*.

CORALLORHIZA, NOT CORALLORRHIZA.—From the first edition of Gray's Manual (1848) through the 6th edition (1890) the saprophytic woodland Coral-roots were rightly called *Corallorhiza*, although the genus was ascribed to Haller, whose definition of it was prior to 1753, in his Enum. Meth. Stirp. Helvet. i. 278 (1742), Haller, who went back to Ruppius, then spelling the generic name *Corallorhiza*. In the 7th edition of Gray's Manual (the *Orchidaceae* revised by Professor Oakes Ames) Haller was bracketed as the author prior to 1753, the post-Linnean author given as Robert Brown; and the spelling was changed to *Corallorrhiza*. Although Robert Brown was there and in the later compendium of Ames, his Enum. Orch. U. S. and Can. 21 (1924), made the first post-Linnean author of the genus, Brown himself had cited the genus as starting after 1753 in Haller's Hist. Stirp. Helvet. ii. 159 (1768). That was correct, so far as it went, and Haller in 1768 had adopted the better Greek spelling, *Corallorrhiza*. Brown gave the common circumboreal species the specific name *C. innata* R. Br. in Ait. Hort. Kew. ed. 2, v. 209 (1813).

In Gray's Manual, ed. 7, and in his Enumeration of 1924 Ames took up for the original species of the genus, the latter said by him to date from 1813, a binomial dating from 53 years prior to Brown's publication, a case of putting prophecy before history which has puzzled many students, for the genus *Corallorhiza* and its species *C. trifida* were both clearly and very adequately published in Chatelain's Specimen inaugurale de Corallorhiza in 1760, the genus clearly diagnosed on p. 6, the species on p. 8. Here, so far as I can find, is the initial date (after 1753) for both CORALLORHIZA and its original species, *C. trifida*, which was based on *Ophrys Corallorhiza* L. (1753). We thus get rid of the situation wherein a binomial seems to have been published 53 years earlier than the genus under which it was placed; but, at the same time, we can return to the long-familiar spelling of the generic name, since, by the International Rules of Nomenclature, the original spelling (in this case of Haller in 1742 as well as of Chatelain in 1760) must stand[1]. The correction of the first post-

[1] Since the above was written the similar decision of Rendle and Britten in Journ. Bot. xlv. 442 (1907) has come to my attention: "This genus was established by J. J. Chatelain 'Specimen inaugurale de Corallorhiza' 1760. He names the species C. TRIFIDA, which must stand, as the Linnean trivial *Corallorhiza* (under *Ophrys*) is inadmissable".

Linnean author of the genus (but incorrectly as *Corallorrhiza*) was made in Britton & Brown, Ill. Fl. ed. 2, i. 574 (1913) but, singularly enough, in a work seeming to be authoritative, Schlechter's Monographie der Gattungen und Arten in Keller & Schlechter, Monographie und Iconographie der Orchideen Europas und des Mittelmeergebietes, Fedde, Rep. Spec. Nov. Sonderbeiheft A, Lief. 9–10, 302, 303 (1928), the anomaly again appears: the genus *Corallorhiza* here started from Robert Brown in 1813, but its single European species given as "1. C. **trifida** Chatel., Spec. inaug. Corall. (1760), p. 8"!

In current works on the flora of the northeastern United States the lip of *Corallorhiza trifida* is described as "white, not spotted" (Gray's Man. ed. 7), "lip unspotted" (Wiegand & Eames, Fl. Cayuga Lake Basin), "lip usually pure white" (A. M. Fuller, Studies on the Fl. Wisc. Part I: The Orchids), etc.; though rarely in America it is described, as by Morris & Eames (Our Wild Orchids), as "almost as often spotted as unspotted". Their discussion, however, shows that no distinction was being made between plants of North America and those of northern Eurasia and that they included Canada to the Arctic. In view of the usual lack of red or purple mottling of the lip in the United States and southernmost Canada it is worth noting that Chatelain, in his original account of European *C. trifida*, said "labellum . . . album, punctis coccineis notatum", while Schlechter, l. c., describing the European plant, says "die Petalen zuweilen rotpunktiert, Lippe weiss rotpunktiert".

In 1916, Cockerell in Torreya, xvi. 231, getting in Colorado the common plant of the United States, with "lip whitish", described it as *Corallorhiza Corallorhiza coloradensis* n. subsp., he then separating it because the true European plant, as shown by the enlarged figures of flowers published by H. Müller, has the throat "dotted with dark pigment". Almost a century earlier, however, Thomas Nuttall clearly understood the situation when he monographed our species in his *Remarks on the Species of Corallorhiza, indigenous in the United States* in Journ. Acad. Nat. Sci. Phila. iii. 135–139, with plate (1823). Nuttall there defined his new *C.* "*verna* . . . petalis omnibus lineari-lanceolatis patentibus, labello oblongo immaculato basi bidentato apice recurvo ovato calcare obsoleto innata . . . whole plant except the lip, of a

yellowish-green colour . . . Lip nearly white, without spots", etc. This species, *C. innata* in the sense of Muhlenberg, Amos Eaton and Nuttall's Genera, was based primarily on material from New England and in his "OBSERVATION" Nuttall wrote: "Mr. Eaton justly remarks the discrepancy of this plant with the species which I had erroneously considered the *Corallorhiza innata* of Europe"; but, pursued by the fatality which so often confuses those who attempt clarification, Nuttall proceeded in his discussion to ascribe to his new eastern American *C. verna* (which he had just correctly defined as "whole plant except the lip, of a yellowish-green colour . . . three outer petals lanceolate-linear spreading; the two inner . . . [of] nearly the same figure and colour. Lip nearly white, without spots, . . . the point ovate") the distinctive characters of European *C. innata!* These were given (with obvious lapse or omission of a phrase) in his observation where he said of his new species: "It differs also from the European . . . principally in the oblong ovate form and whiteness of the inner lateral petals [characters of the *European*], also by the lip which is obtuse and spotted [the spots belonging to the *European*], and in the connivence of the two upper and outer petals with the inner [as shown in detailed figures of the *European*]".

Only by those who see no difference between the Eurasian and the more boreal North American plant, with connivent sepals forming a hood, blunt oblong white petals and round-tipped spotted lip, and the temperate American plant with lanceolate sepals, linear-lanceolate yellow-green petals, lip abruptly tipped and unspotted, Nuttall's confusion of the two in his "OBSERVATION" will be applauded. By those who have carefully compared the two series it will be recognized that in the main the temperate North American plant with "Lip white, unspotted", is well separated from the Eurasian and Hudsonian North American *C. trifida*.

In 1926, reporting on explorations in northern Newfoundland of a party of New England and more southern botanists who were all familiar with the narrow-petalled plant with unspotted lip, I recorded from near the Straits of Belle Isle (a Hudsonian to Subarctic area) a plant which differed from what we had been considering to be true *Corallorhiza trifida*. "The plant which was